

# MTO: A Successful Housing Intervention

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## Abstract

*At its core, Moving to Opportunity (MTO) was a housing intervention offering public housing families tenant-based vouchers to move to the private market. Giving families vouchers resulted in better quality housing for them 10 to 15 years later, potentially contributing to the physical and mental health improvements of those who participated in MTO. Using a triangulated, multisource strategy, we find that two-thirds of all MTO households still receive housing assistance. The Section 8 group experienced higher rates of doubling up, although the MTO intervention had no effect on housing cost burdens. The experimental group experienced material hardship, making tradeoffs between paying their rent on time and paying utilities.*

## Introduction

The research objective of the Moving to Opportunity (MTO) for Fair Housing demonstration was to test the long-term effect of moving families with children from public or project-based housing developments located in very low-income neighborhoods to subsidized private-market rental units in neighborhoods with low poverty levels. The hypothesis tested was that exposing families to low-poverty environments would result in improvements in their employment, income, education, health, and social well-being. Although it was also a larger social intervention, MTO was, at its core, a housing intervention offering families living in some of the worst public housing developments in the nation the opportunity to receive a tenant-based voucher and move to the private market. Most cities have extremely long waiting lists for housing assistance, particularly tenant-based vouchers, because need is greater than supply, which makes it difficult for those already in public housing to switch to using vouchers. The MTO lottery offered a rare opportunity for these residents to jump to the head of the line (Finkel and Buron, 2001; Turner and Kingsley, 2008).

The MTO demonstration's experimental design (described in other articles in this symposium and in Sanbotmatsu, 2011) also makes comparing different forms of housing assistance possible. Currently, the federal government provides rental housing subsidies for very low-income households in two basic forms: project-based subsidies are attached to specific apartments or homes managed by public housing agencies (PHAs) or private owners, whereas tenant-based housing vouchers help pay the rent for homes and apartments on the private market (for more detail, see Turner and Kingsley, 2008). Over the years, vouchers have accounted for a growing share of all federal assistance to very low-income renters. Housing advocates and policymakers, however, continue to debate the relative strengths and weaknesses of these two approaches. MTO provides an opportunity to compare rigorously, all else being equal, the benefits for low-income families of living in subsidized projects as opposed to receiving vouchers or vouchers plus an incentive to locate in a low-poverty neighborhood. Note, however, that the subsidized projects targeted for participation in the MTO demonstration are not typical of all federally subsidized rental housing. By design, the targeted projects were located in high-poverty neighborhoods and suffered from physical deterioration and social distress.

## Context for the MTO Demonstration

In 1994, when MTO began, the public housing program had become a national symbol of the failures of social welfare programs. The grim highrise towers and sprawling barracks-style developments that dominated urban landscapes were a highly visible reminder of the crime, poverty, and other social ills afflicting many central city communities (Popkin et al., 2000). Many public housing properties were poorly constructed, badly managed, and inadequately funded, leading to extensive repair backlogs and putting residents at risk of injury or disease (Landrigan, Todd, and Wedeen, 1995; Manjarrez, Popkin, and Guernsey, 2007; Rosenstreich et al., 1997). Furthermore, these developments were often on undesirable urban renewal sites close to other types of subsidized housing, resulting in communities with high concentrations of racially and economically segregated, very low-income households (HUD, 1994; Turner, Popkin, and Rawlings, 2009).

MTO was a key element of the policy changes that began in the 1990s with the intention to transform public housing and use housing assistance to promote access to neighborhoods that offered greater social and economic opportunities for assisted tenants (Turner, Popkin, and Rawlings, 2009). The largest component of this effort was the \$6 billion federal HOPE VI Program, which provided large grants to housing authorities across the nation to demolish their most distressed developments and replace them with new, mixed-income housing (Popkin, Levy, and Buron, 2009).<sup>1</sup>

In all five MTO sites—Baltimore, Boston, Chicago, Los Angeles, and New York City—the public housing developments were physically distressed and would have met the formal definition of substandard housing (NCSDPH, 1992; Scharfstein and Sandel, 1998). At baseline, participants reported extreme dissatisfaction with their housing and complained of problems such as vermin (rats, mice, and cockroaches), mold, and broken plumbing, all of which presented dangers to

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<sup>1</sup> HOPE VI stands for Housing Opportunities for People Everywhere. The program began providing grants to housing authorities in 1993 (Popkin et al., 2000).

health and well-being. Nearly one-half of participants at baseline identified wanting a bigger or better apartment as a motivation for moving (Orr et al., 2003). Therefore, a key question for MTO is how this demonstration affected basic housing outcomes—housing quality, reliance on housing assistance, affordability, and homelessness.

How the MTO demonstration would affect housing outcomes overall was not clear at baseline. Because of the nature of the voucher program and limits on Fair Market Rent (FMR), voucher holders tend to be concentrated in low-income communities where rents are affordable, vacancy rates are high, and quality is relatively low. MTO offered the experimental group participants (those who were offered a voucher that could be used only in census tracts with 1990 poverty rates of less than 10 percent and who received additional mobility counseling) the assistance to move to low-poverty neighborhoods that might theoretically offer access to better quality housing stock and more responsive landlords. Even with assistance, however, participants might have trouble navigating the private market, have difficulty leasing up or securing a unit, and encounter discrimination. In the long term, even those who initially were successful in finding a unit and leasing up might experience housing instability if they had to move because of changes in the rental market or problems with their landlords. Conversely, if MTO really helped participants improve their social and economic circumstances, they might earn their way off housing assistance, leaving them vulnerable to economic reversals.

As it turned out, in addition to the basic challenges of navigating the rental market with a voucher, the demonstration took place in the context of a rapidly changing housing market, during a period when the incomes of Americans with the lowest incomes declined (after adjusting for inflation) and housing markets became even more segregated by income and race (Briggs, Popkin, and Goering, 2010).

We begin this article briefly summarizing the key findings. Then we review the data sources and methodology used for analysis, describing in detail the new multisource triangulation method used to identify MTO participants' housing assistance at the time of the final impacts evaluation (Sanbonmatsu et al., 2011). We review our findings regarding housing quality, homelessness and doubling up, housing costs and burdens, and housing payment challenges. We finish by considering the implications of the MTO demonstration and receiving vouchers in general.

## **Summary of Findings**

Originally, giving low-income families vouchers at the start of the demonstration resulted in better quality housing compared with that of the control group (participants who were not offered vouchers or counseling). This finding is consistent with research on the effect of HOPE VI redevelopment on outcomes for relocated residents (Popkin, Levy, and Buron, 2009). The public housing developments in the MTO demonstration were in such poor shape that participants both experienced immediate improvements (evidenced by the results from the interim survey [Orr et al., 2003]) and sustained them over the long term (evidenced by the final evaluation survey results). These improvements in housing quality could have very likely contributed to the improvements in the physical and mental health of MTO participants.

Approximately two-thirds of MTO participants continued to rely on housing assistance at the time of the final impacts evaluation. Because voucher holders did not experience any improvements in their employment or earnings over the course of the demonstration, the fact that they are still as likely to rely on housing assistance as the control group is not surprising.

We found limited evidence that providing vouchers results in more housing instability compared with not offering vouchers. Receiving a voucher did not have any differential effect on experiencing homelessness compared with that of the control group; the Section 8 group (those who were offered a voucher without any geographic restrictions and no additional counseling), however, experienced more instances of doubling up with friends and family than the control group did. Vouchers also had no disproportionate effect on housing costs, which were very high for all MTO participants, even those still receiving housing subsidies. The recent housing boom may have played a factor in explaining these high housing costs, causing all MTO voucher holders who stayed in place to pay more out of pocket for rent.

Voucher holders were more likely to ensure they were not late paying their rent, reflecting the requirements of living in the private market. It appears, however, that they were also more likely to make a tradeoff by paying their utilities late or not at all, which resulted in the utilities being turned off. Again, this finding is consistent with other research on families moving from public housing to the private market and suggests a need for greater attention to helping voucher holders meet the costs of utilities in private-market units.

## Data and Methods

For most of our analysis in this article, we rely on the survey data collected by the University of Michigan's Institute for Social Research between June 2008 and April 2010 under its contract with the National Bureau of Economic Research for the final impacts evaluation. The survey used for the MTO final impacts evaluation (Sanbonmatsu et al., 2011) collected information from 3,273 adults and 5,101 targeted youth, covering a wide variety of outcomes and mediators in six domains, with response rates of 89.6 percent for adults and 88.7 percent for youth. In this article, we focus on the following housing outcomes and mediators self-reported by the MTO participants: housing quality, housing assistance, homelessness and doubling up, housing costs (rents or mortgages plus utilities), housing cost burdens, difficulty paying rents or mortgages plus utilities on time, eviction because of late rent or mortgage payments, and utilities being turned off because of late payments.

Most of our analysis in this article focuses on the intention-to-treat (ITT) effects, comparing the average housing outcomes of the experimental group with those of the control group. We also compare the average outcomes of the Section 8 group with those of the control group. All ITT effects are listed as such in the exhibits. The exhibits also include the treatment-on-the-treated (TOT) effects, which capture the effect of moving with either an MTO low-poverty or a traditional Section 8 voucher.<sup>2</sup>

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<sup>2</sup> We used the same sampling weights and regression models as described in Sanbonmatsu et al. (2011) to report the same ITT and TOT results as published in the final impacts evaluation.

Because we are interested in assessing whether offering vouchers improves low-income families' outcomes, we look at how both the experimental and Section 8 groups fared compared with the control group.

## Identifying Instances of Homelessness and Doubling Up

Analysts tracked MTO participants' residences throughout the duration of the demonstration, including addresses identified between surveying periods. The final impacts evaluation survey asked MTO participants to confirm each past address and report the month and year that they first moved to and left that address. In addition, the survey asked participants if, at any time between these addresses, they did not have a place of their own to stay. It also asked those responding in the affirmative with whom or where they stayed—such as, with friends or relatives, on the street, in a shelter, in an abandoned building, in a car, or in a hotel or motel, among other options—how long they were without a place of their own, and if their child(ren) was (were) living with them at the time. Participants were identified as having an instance of doubling up if they reported that they did not have a place of their own to stay and lived with their friends or family. People who reported being doubled up are, by definition, unstably housed. Heads of household were identified as having been *literally homeless*<sup>3</sup> if they reported that they did not have a place of their own to stay and lived on the street or in shelters, abandoned buildings, cars or vans, movie theaters, or laundromats—essentially anywhere that is not deemed fit as a typical residence. Neither definition included participants staying at a hotel or motel, even when the respondent did not have a place of his or her own.

## Identifying Housing Assistance Status Using Multiple Data Sources

We employed a new multistep, multisource process to identify more accurately whether each MTO head of household was receiving *any* federal rental assistance<sup>4</sup> and to determine the *specific type* of assistance received among those who were assisted at the time of the final impacts evaluation.<sup>5</sup> Although housing assistance status is a key outcome of the MTO demonstration, determining whether a household is still receiving a subsidy and, if so, what type of subsidy it is receiving has been surprisingly difficult to determine. Other research has documented that recipients often misidentify the type of housing assistance they receive or erroneously report not receiving any assistance at all (see the appendix of Shroder, 2002). For instance, those using housing vouchers often misreport that the PHA is their landlord or simply say that they pay their own rent. Residents in all types of assisted housing often just respond that they live in “housing” without being able to specify which type. Relying on administrative housing assistance data can also be unreliable, because resident

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<sup>3</sup> HUD uses the term *literally homeless* to differentiate between families living in places not fit for everyday residence (such as on the street, in abandoned buildings, in cars or vans) and families who are precariously housed, such as those who are doubled up. The full definition is available in HUD (2006).

<sup>4</sup> Federal rental assistance, also referred to as *deep subsidy*, is defined as participating in a program that cuts housing costs to 30 percent of income (or some specified flat cost) for all participants in that program.

<sup>5</sup> The specific types of assistance include public housing, tenant-based federal rental assistance, project-based nonpublic housing federal rental assistance, and no federal rental assistance (including owners, unassisted renters, the homeless, and those with other statuses).

annual recertification records are not always entered into the appropriate databases (Olsen, Davis, and Carrillo, 2005). To solve this problem, other researchers determined housing assistance status only where survey and administrative data match (Verma and Riccio, with Azurdia, 2003). This methodology, however, can exclude a significant proportion of those receiving housing assistance. At the time of the interim survey, Orr et al. (2003) reported two housing assistance statuses of MTO participants: one based on survey responses and the second from administrative data. Only a 78-percent agreement existed between the two data sources.

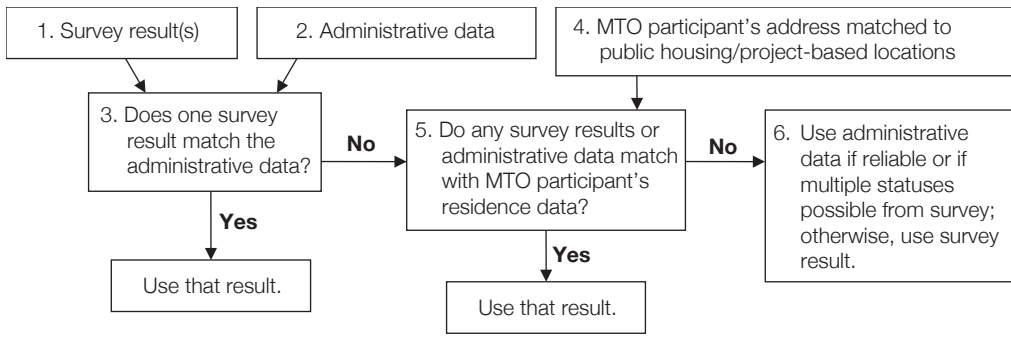
To reduce misreporting by MTO participants, the survey for the MTO final impacts evaluation included a new series of questions to assess MTO participants' housing assistance status.<sup>6</sup> We then compared the survey responses with two annually collected administrative sources—Multifamily Tenant Characteristics System (MTCS)/Public Indian Housing and Information Center (PIC) and Tenant Rental Assistance Certification System (TRACS)/Multifamily data—to identify each MTO participant's type of housing assistance. MTCS/PIC data contain longitudinal information on families living in public housing or receiving tenant-based housing vouchers (Form 50058), whereas TRACS/Multifamily data contain longitudinal information on families living in project-based Section 8 housing (Form 50059). The U.S. Department of Housing and Urban Development (HUD) Office of Policy Development and Research successfully matched approximately 90 percent of MTO heads of household to one or both longitudinal administrative data sources using a combination of first and last names, date of birth, and Social Security number.

In the first step of this new process to identify participants' housing assistance status, we analyzed the series of housing assistance survey responses (step 1 in exhibit 1). The researchers coded respondents' answers to each survey question as either eliminating or not eliminating each of eight possible housing assistance statuses tracked in this first step.<sup>7</sup> As a result, MTO participants could have more than one possible assistance status at this point. Researchers chose this elimination method, as opposed to identifying affirmative answers to questions, to remove the nonresponse bias, particularly from inconsistently applied skip patterns. It also enabled the analysts to confirm participants' multiple possible responses against the two administrative data sets. For instance, if we had used an affirmative method, a head of household who answered that the PHA is his or her landlord, even if that was not the case, would eliminate all housing assistance statuses except public housing, which often mistakenly occurs. Another example is that nine heads of household in the MTO final survey affirmatively answered that they received housing vouchers but denied that their landlords required proof of income for housing. By keeping the possibility that the person was using a voucher, we later were able to use the administrative sources to further hone down the possible housing assistance types.

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<sup>6</sup> Researchers based the new questions on the MTO interim survey (Orr et al., 2003) and the HOPE VI Panel Study, a five-site study that tracked outcomes for 887 residents of public housing developments targeted for redevelopment. See Popkin et al. (2002) for a full description of the study.

<sup>7</sup> The eight possible housing categories are renter with tenant-based assistance, renter in public housing, renter with project-based assistance, renter without housing assistance, homeowner, homeless individual, individual who lives with family or friends and does not pay rent, and individual with another housing arrangement. The researchers could not determine assistance status for owners, because most owners were not asked any questions about housing assistance. For this reason, the final categories include information only on rental assistance, not on homeownership assistance.

**Exhibit 1****Multistep Triangulation Process To Identify Housing Assistance Status**

Researchers then separately analyzed MTO heads of household who were successfully linked to the MTCS/PIC and TRACS/Multifamily data to determine the housing assistance status for any head of household on the administrative files (step 2). Researchers then compared the identified type of housing assistance from the survey responses and the administrative sources (step 3). If one status from the survey analysis matched a status from the administrative data, analysts assigned the respondent that housing assistance status.

Survey responses and the administrative sources did not match for 14 percent of MTO participants. Analysts compared those participants' residences at the time of the final evaluation survey with the known addresses of the PHA's housing developments and project-based assistance buildings (step 4). Also, they compared MTO participants' addresses (ZIP+4) at the time of the final survey with both the survey responses and administrative data (step 5). For the 7 percent of MTO participants who still had conflicting housing assistance statuses after step 5, analysts selected the housing assistance status from the administrative data if the participant's administrative records matched residents' characteristics from the survey file and they found no duplicate records (step 6). Otherwise, analysts assigned participants a status based on the survey result. Exhibit 1 summarizes the process.

The following sections describe the housing-related findings from the survey for the MTO final impacts evaluation.

**Findings**

The experimental and Section 8 group households experienced improvements in housing quality, but findings on housing stability were mixed. Changes in the housing market affected all households in the MTO demonstration. Neither the experimental nor Section 8 group experienced any differences in housing affordability or housing assistance.

## **Sustained Housing Quality Improvements**

The MTO demonstration improved the housing quality of households that formerly lived in rundown public housing projects, consistent with findings from the HOPE VI Panel Study (Comey, 2004; Popkin, Levy, and Buron, 2009). MTO participants started off at baseline living in very dire housing conditions. For instance, 25 percent reported their housing to be in poor condition, 58 percent reported problems with plumbing, and 61 percent reported problems with rats or mice. At baseline, MTO participants identified wanting better housing quality or a bigger sized unit (or wanting to leave their unsafe neighborhoods) as one of the main reasons for wanting to move (Orr et al., 2003).

At the time of the interim survey, evidence suggested that the demonstration positively affected both the experimental and Section 8 groups' housing quality: 52 percent of the control group rated their housing as excellent or good compared with 62 percent of the experimental group and 59 percent of the Section 8 group (Orr et al., 2003). The experimental and Section 8 groups also reported fewer problems with vermin and peeling paint.

Exhibit 2 shows that, at the time of the final impacts evaluation, the positive effects on housing quality were sustained, particularly for the experimental group. Participants in the experimental group were more likely than those in the control group to rate their housing as excellent or good. The Section 8 and control groups no longer exhibited any statistical difference, however. Both the experimental and Section 8 groups were significantly less likely than the control group to report a variety of housing problems, including peeling paint, broken plumbing, vermin, and broken windows. Households in the Section 8 group experienced fewer problems than the control group with broken heat, and the households in the experimental group experienced fewer problems with broken locks.

The consequences of living in substandard housing have been well documented. Poor housing quality has been linked with poor physical and mental health (Krieger and Higgins, 2002; Matte and Jacobs, 2000). Children and adults living in damp, moldy housing, often the result of plumbing problems, tend to have more medical problems such as respiratory problems, headaches, nausea, and vomiting compared with residents living in drier houses (Hunt, 1993; Platt et al., 1989). Increased incidents of asthma have been linked to exposure to vermin such as cockroaches, mice, and rats (Rosenstreich et al., 1997). In addition, in a review of literature connecting mental health and housing quality, Evans, Wells, and Moch (2003) found a positive correlation between housing quality and psychological well-being. This same result has also been seen in children; children living in poor-quality housing are more likely to display behavioral problems and have difficulties concentrating (Evans, Saltzman, and Cooperman, 2001).

The MTO final impacts evaluation found important positive mental and physical health effects for adults and female youth (Sanbonmatsu et al., 2011). Most previous research studies relied primarily on correlations that omitted individual or family characteristics that could have affected the types and quality of housing those families selected. The experimental and longitudinal design of the MTO demonstration removed the selection bias that may have challenged previous studies. The sustained housing improvements documented for the families in the experimental group might have contributed to these important physical and mental health gains.



**Exhibit 2****ITT/TOT Estimated Effect on Housing Quality**

Outcome	Control Mean	Experimental vs. Control		Section 8 vs. Control		Respondents (N)
		ITT	TOT	ITT	TOT	
<b>Overall rating of current housing</b>						
Rated housing as excellent or good	0.570	0.053* (0.210)	0.109* (0.044)	0.031 (0.029)	0.050 (0.046)	3,267
<b>Current housing problems (big or small)</b>						
Heat broken	0.179	-0.013 (0.016)	-0.027 (0.033)	-0.037~ (0.020)	-0.059~ (0.033)	3,252
Lock broken	0.144	-0.029~ (0.015)	-0.059~ (0.030)	-0.019 (0.019)	-0.031 (0.030)	3,267
Paint peeling	0.466	-0.091* (0.021)	-0.187* (0.044)	-0.120* (0.028)	-0.192* (0.044)	3,265
Plumbing broken	0.327	-0.058* (0.020)	-0.119* (0.040)	-0.053* (0.026)	-0.085* (0.041)	3,265
Rats or mice present	0.347	-0.038~ (0.020)	-0.079~ (0.041)	-0.045~ (0.027)	-0.072~ (0.043)	3,265
Cockroaches present	0.356	-0.053* (0.019)	-0.110* (0.040)	-0.089* (0.025)	-0.142* (0.039)	3,267
Window broken	0.233	-0.065* (0.017)	-0.134* (0.036)	-0.078* (0.023)	-0.124* (0.036)	3,267

ITT = intention to treat. OLS = ordinary least squares. TOT = treatment on the treated.

\* =  $p < .05$ . ~ =  $p < .10$ .

Notes: Robust standard errors shown in parentheses. Experimental and Section 8 effects were estimated jointly using an OLS regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release.

Source: Adult long-term survey

**No Effect on Housing Assistance Receipt**

Part of the rationale for the MTO demonstration was that moving to low-poverty, resource-rich neighborhoods could potentially improve families' economic well-being. It follows that if families' economic status improved, they might earn their way off housing assistance. The specific form of housing assistance a family receives (that is, public housing or tenant-based housing voucher) may also be an important mediator for other key MTO demonstration outcomes. Families who receive vouchers may have more and better options about where to live than those living in public housing. Alternatively, voucher holders may experience more residential instability and have trouble making payments and operating in the private market, which could undermine other outcomes.

Ultimately, MTO had no effect on housing assistance receipt at the time of the final impacts evaluation. No statistical significance emerged between the experimental and control groups in the proportion of households still on assistance, and the Section 8 group was only slightly more likely to be receiving any sort of assistance than the control group (5 percentage points more, where  $p < .10$ ). This finding is consistent with other findings from the final impacts evaluation, showing

no effect on families' employment levels and earnings. Therefore, our finding that families in the experimental group were no more likely than the families in the control group to "income out" of housing subsidies is unsurprising.

Although no ITT effect existed, exhibit 3 shows that almost two-thirds (62 percent) of the households in the control group were still receiving housing assistance 10 to 15 years after the start of the demonstration. The proportion still on assistance was slightly lower than at the time of the interim survey, which was 71 percent (determined exclusively from the interim survey responses) or 66 percent (determined exclusively from the administrative data) of the control group (Orr et al., 2003). Analysts did not use the previously described new triangulation method for the interim survey results.

The fact that so many MTO participants were still receiving housing subsidies after 10 to 15 years is unusual. The median length of time that households use housing assistance is 4.7 years for those living in public housing and 3.1 years for voucher holders, and families with children receive assistance for even less time—3.2 years for those living in public housing and 2.6 years for those participating in the voucher program (Turner and Kingsley, 2008). MTO families started in severely distressed public housing developments, however; by the 1990s, when the MTO demonstration began, families with more resources or better options largely had fled the original public housing and project-based housing because of crime and disorder, leaving behind a population dominated by the most vulnerable households. The HOPE VI Panel Study, which tracked families relocated as the result of HOPE VI redevelopment initiatives, found a similar pattern; at baseline, those respondents reported having lived in public housing for 10 or more years, on average (Popkin, Levy, and Buron, 2009). These long-term public housing residents, in general, have tenuous connections to the labor market and are unlikely to earn their way off assistance (Briggs, Popkin, and Goering, 2010; Theodos et al., 2012).

Finally, compared with households in the control group, households in both the experimental and Section 8 groups were less likely to be living in public housing and more likely to be using a

**Exhibit 3**

ITT/TOT Estimated Effect on Receipt of Housing Assistance

Outcome	Control Mean	Experimental vs. Control		Section 8 vs. Control		Respondents (N)
		ITT	TOT	ITT	TOT	
Any housing assistance	0.620	0.026 (0.021)	0.054 (0.043)	0.045~ (0.027)	0.072~ (0.044)	3,273
Public housing	0.296	- 0.107* (0.017)	- 0.220* (0.035)	- 0.110* (0.022)	- 0.177* (0.036)	3,273
Voucher	0.252	0.159* (0.019)	0.328* (0.040)	0.194* (0.026)	0.312* (0.042)	3,273

ITT = intention to treat. OLS = ordinary least squares. TOT = treatment on the treated.

\* =  $p < .05$ . ~ =  $p < .10$ .

Notes: Robust standard errors shown in parentheses. Experimental and Section 8 effects were estimated jointly using an OLS regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release.

Source: Adult long-term survey

voucher (16 and 19 percentage points more, respectively). This finding is not surprising, given that both groups were originally offered vouchers. More surprising is that 25 percent of the households in the control group were receiving vouchers at the time of the final impacts evaluation. This finding likely reflects the fact that 42 percent of MTO families started off in public housing developments that were later “HOPE VI’ed” and could have been offered a voucher during the relocation process (Sanbonmatsu et al., 2011).

### Mixed Effect on Housing Instability

The ITT analysis found mixed results regarding whether being offered a voucher resulted in more instances of homelessness or doubling up. Being offered a voucher had no discernible additional effect on the amount of time spent homeless for the experimental or Section 8 groups (exhibit 4), a finding that did not support the hypothesis that the treatment would improve families’ social and economic circumstances, enabling families to earn their way off housing assistance and possibly leaving them vulnerable to economic reversals. The Section 8 group, however, was 5 percentage points more likely than the control group to experience doubling up with friends and family. Looking at the groups who actually leased up with the voucher (TOT), as opposed to just being offered the voucher (ITT), the instances of doubling up for the Section 8 group increased to 7 percentage points more than the control group.

#### Exhibit 4

##### ITT/TOT Estimated Effect on Homelessness

Outcome	Control Mean	Experimental vs. Control		Section 8 vs. Control		Respondents (N)
		ITT	TOT	ITT	TOT	
<b>Homeless at least once after random assignment</b>						
Ever homeless	0.214	0.020 (0.017)	0.040 (0.017)	0.056* (0.024)	0.090* (0.039)	3,273
Ever doubled up	0.191	0.008 (0.017)	0.017 (0.034)	0.045* (0.023)	0.073* (0.037)	3,273
Ever literally homeless	0.049	0.009 (0.009)	0.018 (0.019)	0.018 (0.014)	0.030 (0.022)	3,273
<b>Number of homeless spells</b>						
Doubled up	0.257	0.014 (0.026)	- 0.028 (0.033)	0.074* (0.035)	0.120* (0.056)	3,273
Literally homeless	0.061	0.003 (0.012)	0.006 (0.025)	0.024 (0.020)	0.038 (0.032)	3,273

ITT = intention to treat. OLS = ordinary least squares. TOT = treatment on the treated.

\* =  $p < .05$ . ~ =  $p < .10$ .

Notes: Robust standard errors shown in parentheses. Experimental and Section 8 effects were estimated jointly using an OLS regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release. “Doubled up” is defined as staying with friends or family when a respondent did not have a home of his or her own. “Literally homeless” is defined as staying in a shelter, on the street, in an abandoned building, in a car or van, in a movie theater or laundromat, and so on, when a respondent did not have a home of his or her own. Neither definition includes those staying at a hotel or motel, even when he or she did not have a place of his or her own.

Source: Adult long-term survey

Although results were mixed regarding whether being offered a voucher influenced homelessness or doubling up, 21 percent of control group participants reported experiencing being either doubled up or homeless at some point during the demonstration. Nearly one in five (19 percent) of the control group experienced at least one instance of doubling up and 5 percent experienced a spell of homelessness at some point during the demonstration.

Assessing whether these rates of homelessness and being doubled up are higher than usual for a population that has received housing assistance is difficult. The best benchmarks are the HOPE VI Panel Study, which found similar rates of homelessness among original residents of HOPE VI developments, and MTO participants at the time of the interim evaluation. The HOPE VI Panel Study found that at the time of the survey or during the previous 12 months, 1.7 percent of HOPE VI participants lived in a homeless shelter or on the streets and 3.9 percent lived in a doubled-up situation (McInnis, Buron, and Popkin, 2007). These shares were similar to those found in an analysis of all three groups of MTO participants at the time of the interim survey who reported that they did not live in the same housing unit for the past 12 months.

Another often-referenced random assignment research study, the Welfare-to-Work voucher study, found that housing vouchers dramatically reduced the risk of homelessness (Khadduri, 2008; Mills et al., 2006; Patterson et al., 2004). Participants in the Welfare-to-Work voucher study, however, were likely to start off in the unsubsidized private market, not in public housing like the MTO families. Only 13 percent of Welfare-to-Work participants reported receiving some type of housing assistance at baseline, before any treatment was applied (Mills et al., 2006). In addition, the effects were tracked for a much shorter period of time. Note that at baseline, 25.8 percent of Welfare-to-Work participants reported living with family or friends (comparable to the MTO doubled-up category) and 1.9 percent reported living in a homeless shelter or transitional housing; the percentage of MTO participants who reported experiencing homelessness at the time of the final impacts evaluation was twice as great. Because the populations differ so markedly, however, a clear comparison is difficult to make.

### **No Effect on Housing Affordability**

Exhibit 5 shows that average housing costs for households in the control group at the time of the final impacts evaluation were relatively low, at \$493 for monthly rent or mortgage and \$679 total, even when compared with just the average rents in the five metropolitan areas. Because almost two-thirds of MTO heads of household were receiving federal housing subsidies, we would expect their housing costs to be relatively low. Furthermore, no statistically significant differences emerged between either the experimental and control groups or the Section 8 and control groups, except that low-poverty voucher group households paid approximately \$10 per month more for electricity than control group households.

Whether the low-poverty voucher treatment would result in higher cost burdens for families in the experimental group was another question.<sup>8</sup> Economic improvements for households in the

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<sup>8</sup> Housing cost burdens are the ratio of the amount that families pay for their rent or mortgage plus utilities over their household income. HUD recommends that families pay no more than 30 percent of their income on housing costs; otherwise, they are considered to have high housing cost burdens.

experimental group could have resulted in families' "incoming out" of their housing assistance, removing an important safety net. As exhibit 6 shows, however, neither low-poverty nor traditional voucher offers had an effect, either positive or negative, on housing cost burden.

Exhibit 6 also shows that many MTO families had high housing cost burdens. More than two-thirds of the households in the control group paid more than 30 percent of their incomes on housing and 43 percent were severely burdened with housing costs, paying more than 50 percent of their

## Exhibit 5

### ITT/TOT Estimated Effect on Housing Costs

Outcome	Control Mean	Experimental vs. Control		Section 8 vs. Control		Respondents (N)
		ITT	TOT	ITT	TOT	
Total housing costs	\$678.73	19.50 (23.30)	39.67 (47.39)	- 6.26 (30.73)	- 10.00 (49.10)	3,180
Monthly rent or mortgage	\$493.04	3.16 (20.16)	6.43 (41.01)	- 24.44 (26.13)	- 39.05 (41.76)	3,180
Electricity costs	\$114.07	10.44* (5.30)	21.49* (10.91)	11.56 (7.36)	18.50 (11.78)	3,255
Gas costs	\$73.81	4.49 (5.36)	9.23 (11.03)	5.31 (7.60)	8.49 (12.16)	3,255

ITT = intention to treat. OLS = ordinary least squares. TOT = treatment on the treated.

\* =  $p < .05$ .

Notes: Robust standard errors shown in parentheses. Costs are in 2009 dollars. Experimental and Section 8 effects were estimated jointly using an OLS regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release.

Source: Adult long-term survey

## Exhibit 6

### ITT/TOT Estimated Housing Cost Burdens

Outcome	Control Mean	Experimental vs. Control		Section 8 vs. Control		Respondents (N)
		ITT	TOT	ITT	TOT	
Household is housing cost burdened (monthly housing costs/income > 30%)	0.676	0.011 (0.020)	0.022 (0.041)	0.020 (0.027)	0.032 (0.043)	3,169
Household is severely housing cost burdened (monthly housing costs/income > 50%)	0.426	- 0.004 (0.021)	- 0.007 (0.043)	0.017 (0.029)	0.027 (0.046)	3,169

ITT = intention to treat. OLS = ordinary least squares. TOT = treatment on the treated.

Notes: Robust standard errors shown in parentheses. Experimental and Section 8 effects were estimated jointly using an OLS regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release.

Source: Adult long-term survey

incomes on housing. This finding is surprising considering that two-thirds of MTO participants received housing subsidies that should have buffered households from spending so much of their incomes on housing.

A number of factors could contribute to these very high housing cost burdens. First, the information to calculate housing cost burdens comes primarily from self-reports provided during the survey and not from HUD administrative records that verify rents paid and family incomes. The survey asked families how much they pay for their portion of rent or mortgage, whether their utilities (that is, electricity and gas) are included in their rent, and, if not, how much utilities cost the previous month.<sup>9</sup> As in the case with the American Housing Survey, families did not have to provide documentation to prove amounts. Determining whether respondents provided information that represented the full private-market rent (as opposed to just their portion of rent) or whether they took the PHA's utility allowances into account when reporting their utility costs is also not possible.<sup>10</sup> The denominator of the housing cost burden—families' incomes—also comes from survey responses and, in some cases, administrative data sources. Researchers did not apply HUD's countable income rules and family income adjustments, which are used for Housing Choice Voucher Program (HCVP) programmatic purposes to the information collected from the survey, because much of the information would not be available. Therefore, any comparison of MTO families' housing cost burdens to other cost burdens that took HUD's income and programmatic calculations into account would be misleading.<sup>11</sup>

The fact that, under certain circumstances, subsidized families may pay more than originally expected also may explain the very high housing cost burdens. The HCVP is administered locally by PHAs under contract with HUD. Under voucher program rules, participants are responsible for finding and leasing a private-market unit that meets certain criteria (for example, HUD's Housing Quality Standards and rents must be "reasonable" or similar to comparable units). HUD subsidizes the voucher based on a payment standard set by the PHA between 90 and 110 percent of FMR. If the approved rent for the unit is equal to or less than the payment standard, participants pay 30 percent of their adjusted income toward rent and utilities and the PHA pays the difference. Should the rent and utility costs exceed the PHA's payment standard, the PHA pays the difference between the

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<sup>9</sup> The rent question included in the survey was, "Altogether in the month just passed, what did you pay in rent? We are interested only in knowing your part of the payment." The first question regarding utilities was, "Now I have some questions about your utilities. Do you pay for your own [specific utility] or is that included in the rent?" If the answer to the first question was that they pay for the utility, then the second question was, "How much was the [specific utility] bill last month?" (Sanbonmatsu et al., 2011)

<sup>10</sup> PHAs are free to decide their method of subsidizing utilities; some PHAs reimburse residents after payments are made and others pay directly to the utility company (HUD, 2003). In addition, housing authorities vary in terms of utility allowances. Information on utility allowance maximums for the different housing authorities is available on the PHA websites: Baltimore (<http://static.baltimorehousing.org/pdf/2010util.pdf>), Boston (<http://www.bostonhousing.org/pdfs/LHS2011UtilityChart.pdf>), Chicago (<http://www.lakecountyhousingauthority.org/HousingChoiceVoucherProgram/Owners/ProgramRentsUtilityAllowance.aspx>), Los Angeles (<http://www.hacla.org/attachments/wysiwyg/149/Util-12-1-11MFR1.pdf>), and New York ([http://www.nyc.gov/html/nycha/html/section8/voucher\\_payment.shtml](http://www.nyc.gov/html/nycha/html/section8/voucher_payment.shtml)).

<sup>11</sup> Additional policy reasons could explain the high housing cost burdens. HUD applies prorated rents to households with one or more people without eligible citizenship status. By definition, all those households pay more than 30 percent of their adjusted income for rent. This policy could be a factor in Los Angeles, in particular.

payment standard and 30 percent of the participant's adjusted income, and the participant pays 30 percent of his or her adjusted income plus the additional rent and utility costs. If the total payment for a unit exceeds 40 percent of the recipient's income, however, the unit does not meet program requirements and cannot be rented with a voucher (Finkel and Buron, 2001). This hard cap at 40 percent of families' incomes applies only to those renting new units or to new participants using assistance in place, however. MTO families who have not moved in more than 1 year could be paying more than 40 percent of their incomes for housing if landlords increased rent.<sup>12</sup> The fact that the MTO demonstration occurred during a national housing boom (and bust) provides some evidence that rent increases could be another factor contributing to the surprisingly large housing cost burdens.

### **Housing Boom Contributed to High Housing Cost Burdens**

The national housing boom affected all five MTO sites, creating serious challenges for voucher holders attempting to navigate the private market (Briggs, Popkin, and Goering, 2010). When the MTO demonstration began, the rental market was relatively soft (moderate vacancy rates and prices), particularly in Los Angeles, where participants were able to lease single-family homes in the San Fernando Valley. Starting in the early- to mid-2000s, prices soared for both owner-occupied and rental units. For example, controlling for inflation, home values in Boston's metropolitan area increased from an average of \$343,533 in 2000 to \$451,153 during 2005 through 2009. This increase was modest in comparison with that in the Los Angeles metropolitan area, where average home values increased from \$384,905 in 2000 to \$604,337 during 2005 through 2009.<sup>13</sup>

Meanwhile, the affordable housing stock plummeted, especially for low-income renters. From 2003 through 2009, the number of very low-income renters across the nation (with incomes of less than 50 percent of the area median) swelled from 16.3 to 18.0 million, while the number of rental units affordable at those income levels, not rented by higher income households and of adequate quality, dropped from 12.0 to 11.6 million. In 2009, extremely low-income renters (with incomes of less than 30 percent of area median) outnumbered affordable, available, and adequate units almost three to one (Steffen et al., 2011).

Exhibit 7 shows that in all five MTO sites, families faced housing markets in which average rents had increased substantially between the beginning and end of the decade.<sup>14</sup> Even after controlling for inflation, average monthly rents in Baltimore, Los Angeles, and New York increased more than \$100 during this period. To a lesser extent, rents at the lower end of the spectrum also increased, particularly in Los Angeles, where the 25th percentile of monthly rent increased nearly \$100.

With the exception of Baltimore, rental vacancy rates also started relatively high in 1990, giving unsubsidized and subsidized renters more opportunities to rent. Rental vacancy rates had tightened

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<sup>12</sup> For more information on the HCVP, see [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/public\\_indian\\_housing/programs/hcv/about/fact\\_sheet](http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/hcv/about/fact_sheet).

<sup>13</sup> Home values are from the 2000 Census and the 2005/2009 American Community Survey. Values are CPI-adjusted to 2009 U.S. dollars.

<sup>14</sup> Exhibit 7 shows the increases in rent at the city level. The trends for the metropolitan statistical areas are similar.

considerably by 2000, meaning that low-income renters faced a much more challenging housing market.<sup>15</sup> These tight rental markets also could have encouraged MTO families to stay put and attempt to pay increased rents out of pocket. Exhibit 8 shows that vacancy rates rose again after 2005, presumably reflecting the national recession.

**Exhibit 7**

**Rent for MTO Cities**

	Average Rent (\$)			25th Percentile Rent (\$)		
	2000	2005/09	Difference	2000	2005/09	Difference
Baltimore	644	809	166	369	434	65
Boston	1,045	1,145	100	544	560	16
Chicago	833	911	78	511	559	48
Los Angeles	934	1,116	182	596	693	97
New York	977	1,110	133	589	636	47

*MTO = Moving to Opportunity.*

*Notes: Data are at the city level. Reported in 2009 dollars.*

*Sources: 2000 Census; 2005/2009 American Community Survey*

**Exhibit 8**

**Average Rental Vacancy Rates**

	Rental Vacancy Rates (%)		
	1990	2000	2009
Baltimore	7.7	7.7	11.8
Boston	7.9	3.2	6.1
Chicago	9.7	6.4	8.3
Los Angeles	6.8	3.8	5.6
New York	4.2	3.5	3.8

*Sources: 1990 and 2000 Census; 2009 American Community Survey*

**Challenges of Managing the Private Market**

One question raised at the beginning of the MTO demonstration was whether families from distressed public housing who received vouchers would be able to meet the private-market standards of paying rent and utilities on time. For many experimental and Section 8 group families, these standards were a first-time experience, and our analysis indicates that participants, particularly the experimental group families, appeared to be making tradeoffs between keeping up with rent payments and paying utilities. This pattern is consistent with findings from MTO families collected after the interim impacts evaluation (Briggs, Comey, and Weisman, 2010) and research on HOPE VI relocatees who move from distressed public housing to the private market (Levy and Woodley, 2007; Popkin et al., 2002; Popkin, Levy, and Buron, 2009).

Exhibit 9 shows that participants in both the experimental and Section 8 groups were less likely to be more than 15 days late in paying their rent or mortgage than were participants in the control

<sup>15</sup> Exhibit 8 shows the rental vacancy rates at the city level. The trends for the metropolitan statistical areas are similar.



**Exhibit 9****ITT/TOT Estimated Effect on Housing Stability and Late Utility Payments**

Outcome	Control Mean	Experimental vs. Control		Section 8 vs. Control		Respondents (N)
		ITT	TOT	ITT	TOT	
<b>Housing stability</b>						
More than 15 days late in paying rent or mortgage at least once during past 12 months	0.258	-0.055* (0.018)	-0.112* (0.037)	-0.067* (0.024)	-0.106* (0.038)	3,242
Received eviction or foreclosure threat because of non-payment at least once during past 12 months	0.124	-0.017 (0.014)	-0.035 (0.028)	-0.033~ (0.018)	-0.053~ (0.028)	3,261
<b>Late utility payments (renters only)</b>						
More than 15 days late in paying utilities at least once during past 12 months	0.333	0.052* (0.020)	0.108* (0.041)	0.033 (0.027)	.0530 (0.043)	3,236
Received shutoff notice because of nonpayment at least once in past 12 months	0.235	0.054* (0.018)	0.112* (0.038)	0.050* (0.025)	0.081* (0.040)	3,236
Utilities shut off for nonpayment at least once in past 12 months	0.052	0.021* (0.010)	0.043* (0.022)	0.016 (0.014)	0.026 (0.022)	3,236

ITT = intention to treat. OLS = ordinary least squares. TOT = treatment on the treated.

\* =  $p < .05$ . ~ =  $p < .10$ .

Notes: Robust standard errors shown in parentheses. Experimental and Section 8 effects were estimated jointly using an OLS regression model controlling for baseline covariates, weighted, and clustering on family. Outcomes from the adult survey also control for field release.

Source: Adult long-term survey

group (6 and 7 percentage points, respectively). No differences emerged in eviction rates between the experimental and control groups, however. The Section 8 group was only slightly less likely than the control group to be evicted (significant at the  $p < .10$  threshold). Experimental group participants, however, were significantly more likely to report both making late utility payments and having their utilities shut off. For instance, experimental group participants were 5 percentage points more likely to be 15 days late paying their utilities, 5 percentage points more likely to have received shutoff notices for their utilities, and 2 percentage points more likely to have had their utilities shut off for nonpayment compared with control group participants.

## Conclusion

At its core, MTO was a housing intervention offering options to families living in some of the worst public housing developments in the nation. MTO demonstrated that giving low-income families vouchers results in higher quality housing compared with lower quality public housing or project-based assisted housing in both the short term (as evidenced by the TOT effect at the time of the survey for the interim impacts evaluation) and the long term (the effects were sustained by the time of the survey for the final impacts evaluation, particularly for the experimental group). This result is supported by studies of other similar populations (Popkin, Levy, and Buron, 2009).

These housing quality improvements could have acted as mediators contributing to the significant gains for MTO participants in mental and physical health outcomes (Sanbonmatsu et al., 2011). The health improvements could either be in response to physical improvements, such as a lack of vermin and mold, or through stress reduction and a general improvement in quality of life. Either way, the importance of these gains for families' well-being cannot be overstated.

The MTO demonstration proved not to have much effect on many of the other housing outcomes tracked. A surprisingly large share of MTO participants continued to rely on housing assistance 10 to 15 years after the start of the demonstration. The Section 8 group experienced more instances of doubling up with friends and family than the control group did, which may indicate that being offered vouchers somehow contributes to housing instability, although this higher instance of doubling up was not found for the experimental group. The MTO demonstration did not affect homelessness (for example, living in a shelter or on the street), and whether the overall MTO participants' share of homelessness at the time of the final impacts evaluation is more or less than expected is unknown. This area could be explored further.

In addition, even with such high shares of families continuing to use housing assistance, housing costs continue to be very high for all MTO participants, even those still receiving subsidies. One possible explanation is that the nation went through a housing boom that could have resulted in more low-poverty and traditional voucher holders staying in place and paying more out of pocket for rent.

Finally, some evidence suggests that MTO did result in more challenges for the experimental group in navigating the private market. Although families in the experimental group were more likely than families in the control group to pay rent on time, they were also more likely to make a tradeoff in paying their utilities late or not at all, which resulted in having the utilities turned off. Again, this finding is consistent with other research on families moving from public housing to the private market and suggests a need for greater attention to helping voucher holders meet the costs of utilities in private-market units.

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